

CLAIMS

What is claimed is:

1. A system for video object range sensing comprising

a computer having a display; and

a video camera for receiving or capturing images of objects in an environment, the video camera being connected to the computer wherein the computer display's brightness is operable as an active source of lighting.
2. The system according to claim 1, further including means for flashing the display at different brightness levels, means for capturing images synchronized and corresponding to these different levels, and computer means for processing the difference between these images to extract range information.
3. The system in claim 2, including means for displaying color information.
4. A method for extracting range information from the digital data obtained from capturing images using a display and a still or moving image capture device, wherein the display's brightness is used as an active source of lighting.
5. The method according to claim 4, wherein the difference between two images captured at two different levels of display brightness is used to select candidates for the objects closest to the camera.
6. The method according to claims 5, further including selecting objects from among the candidates thereby compensating for differences in reflectivity and motion.

7. The method according to claim 5, further including performing image integration to remove camera noise.

8 The method according to claim 5, further including performing morphological operations to filter out noise from the segmentation image.

9. A memory medium for a computer comprising:

means for controlling the computer operation to perform the following steps:

- (a) flashing the computer display at different brightness leve;s;
- (b) capturing images of objects in the environment with a video camera at each of the different brightness levels;
- (c) selecting objects from among the candidates, and
- (d) performing image integration to remove camera noise